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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,859	10/15/2001	Katsuyoshi Fujita	5000-4964	3822

7590 07/25/2003
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EXAMINER

WYSZOMIERSKI, GEORGE P

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 07/25/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,859

Applicant(s)

ISHIKURA ET AL.

Examiner

George P Wyszomierski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 11, 12, 20-29, 31, 32, 36 and 37 is/are rejected.
- 7) ☒ Claim(s) 4, 9, 13-15, 19, 30 and 33-35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. The disclosure is objected to because of the following informalities:
 - a) In claim 22, line 7, "the hydrogen-storage tank" lacks proper antecedent basis.
 - b) In claim 37, line 4, "powdered" is misspelled.

Appropriate correction is required.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 8, 11, 12, 20-26, 29, 31, 32, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fetcenko et al. (U.S. Patent 4,893,756), in view of either Sandrock et al. (U.S. Patent 4,839,085) or Imai et al. (U.S. Patent 6,247,660). This is a new ground of rejection.

Fetcenko et al. discloses a process which includes placing a hydrogen storage alloy in a vessel, and introducing hydrogen into the vessel so that the alloy absorbs hydrogen (and undergoes a volumetric expansion) and undergoes comminution into small flakes or particles. The particles are then cooled, and used in a hydrogen storage electrochemical cell. With respect to instant claims 12 and 32, the examples of Fetcenko comprise titanium and vanadium (see Fetcenko column 9, line 56), and the presently claimed BCC structure would be inherent in such a composition. Fetcenko emphasizes the importance of avoiding exposure of the comminuted particles to atmospheric conditions or oxygen; see Fetcenko column 6, lines 7-11.

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With regard to instant claims 5, 26 and 37, Fetcenko column 6, lines 3-8 suggests such a feature.

Fetcenko does not specify the flat lid limitations of instant claims 8 and 29, and does not discuss either evacuating a hydrogen storage tank or filling a tank with inert gas and transferring the hydrogen storage alloy particles to the tank. However,

a) The use of a flat or any other shaped lid would be within the purview of the prior art, i.e. nothing in the Fetcenko reference would appear to limit the shape of any portion of the apparatus employed therein. It is noted that apparatus limitations generally do not confer patentability upon an otherwise known process; compare *In re Sweeney* (72 USPQ 501). As such, the use of a flat lid would at best define an obvious variant of the Fetcenko process.

b) Both the Sandrock and Imai patents indicate the conventionality in the art of placing hydrogen storage materials in either a vacuum or an inert gas atmosphere following hydriding thereof. See, for example, Sandrock column 6, lines 63-68, column 7, lines 13-20, or column 8, line 17. See also Imai column 7, line 65 to column 8, line 4.

These disclosures of Sandrock or Imai et al. would have motivated one of ordinary skill in the art to include the evacuating or filling with inert gas steps as presently claimed, following a hydrogen comminution process as discussed by Fetcenko et al.

4. Claims 6, 7, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fetcenko et al. in view of Sandrock et al. or Imai et al., as set forth supra, and further in view of Leland (U.S. Patent 4,925,486).

None of Fetcenko, Sandrock, or Imai disclose the ball valve recited in the instant claims. The Leland patent indicates the conventionality in the art of employing a ball valve in a process which involves using hydrogen to comminute metallic alloys into particles; see Leland column 3,

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lines 52-54. Given this disclosure of Leland, the practice of the Fetcenko process (as modified by Sandrock or Imai) in an apparatus which includes a ball valve would have been considered an obvious expedient by one of ordinary skill in the art.

5. In a response filed June 5, 2003, Applicant has amended the independent claims to require either a step of evacuating a hydrogen storage tank or filling such a tank with an inert gas. Applicant alleges that the Fetcenko reference does not disclose or suggest such a step. The examiner's position is that Sandrock and/or the newly applied Imai et al. references supply any deficiency in this respect which may be present in the Fetcenko reference alone.

6. Claims 4, 9, 13-15, 19, 30, and 33-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not disclose or suggest the combination of pressure and temperature as recited in instant claims 4, 13, or 33, nor does the prior art disclose or suggest the concept of continuously supplying an inert gas to the hydrogen storage tank while the lid is being affixed thereto, as set forth in instant claims 9 or 30.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (703) 308-2531. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (703) 308-1146. The fax phone number for this Group is (703) 872-9310 for all correspondence except for After Final amendments in which case the Fax number is (703) 872-9311. The Right fax number for this examiner is (703) 872-9039. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

GPW
July 23, 2003


GEORGE WYSZOMIERSKI
PRIMARY EXAMINER